

MicroMo[®] MOTORS

DC MicroMotors Series 1319

- Fits our Gearhead Series 14/1, 15/2, 15/3, 15/5, 15/8, (Metal Case)
- Available with Optional Rear Shaft for Encoder Mounting
- Samarium Cobalt Magnet System

Continuous Duty Ratings:⁽¹⁾

Speeds up to 12,000 rpm
Torque up to .17 oz-in
Output Power up to 1 Watts



Actual Size

Electrical Specifications:

@22°C (72°F)

For Motor Type 1319T	003	006	012	015	024
Nominal Supply Voltage (Volts DC)	3	6	12	15	24
Armature Resistance (Ohms) ±12%	1.8	6.0	22.0	35	120
Maximum Output Power (Watts) ⁽²⁾	1.18	1.41	1.55	1.5	1.12
Maximum Efficiency (%) ⁽²⁾	72	71	71	69	68
No Load Speed (rpm) ±12% ⁽²⁾	14,900	16,300	17,100	16,100	15,500
No Load Current (mA) ±50% ⁽³⁾	45	30	15	14	7
Stall Torque (oz-in) ⁽²⁾	.431	.469	.489	.506	.389
Friction Torque (at no load speed)(oz-in)	.011	.014	.014	.017	.014
Velocity Constant (rpm/Volt)	5,100	2,800	1,470	1,110	669
Back EMF Constant (mV/rpm)	.196	.357	.682	.901	1.49
Torque Constant (oz-in/A)	.265	.483	.923	1.219	2.025
Armature Inductance (mH)	.040	.130	.470	.745	2.055

Mechanical Specifications:

Mechanical Time Constant (ms) ⁽²⁾	14	14	14	14	14
Armature Inertia (x10 ⁻⁴ oz-in-sec ²)	.038	.038	.038	.042	.034
Angular Acceleration (x10 ³ rad/sec ²) ⁽²⁾	110	120	130	120	120
Thermal Resistances (°C/W)					
Rotor to Case	10	10	10	10	10
Case to Ambient	54	54	54	54	54

Bearing Type	Sintered(standard)	Ball(optional)	Preloaded BB(optional)
Shaft Diameter mm (in)	1.5	1.5	1.5
Maximum Shaft Loading (oz)			
Radial at 3,000 rpm (3mm from bearing)	4.3	18	18
Axial at 3,000 rpm	.72	1.8	1.8
Axial (static)	72	36	36
Shaft Play (measured at bearing) mm(in)			
Radial	≤ .03 (.0012)	≤ .015 (.0006)	≤ .015 (.0006)
Axial	≤ .2 (.0079)	≤ .2 (.0079)	0

Weight (oz) .39 All Types
Maximum Rotor Temperature 125°C (257°F)
Motor Operating Temperature Range -30°C to 100°C (-22°F to 212°F)
Special operating temperatures for -55°C to 125°C (-67°F to 257°F) available on request.

Direction of rotation is reversible and clockwise as seen from shaft end with red lead or solder tab marked + connected to the positive side of voltage supply.

⁽¹⁾Ratings are presented independent of each other.

⁽²⁾Specified at nominal supply voltage.

⁽³⁾Specified with shaft diameter = 1.5 mm at no load speed.

—Specifications Subject to Change—

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Dimensional Outlines:

For Dimensions:	Tolerance
Less than or equal to 6 mm	$\pm .1$ mm (.0039 in)
Less than or equal to 30 mm	$\pm .2$ mm (.0079 in)
Less than or equal to 120 mm	$\pm .3$ mm (.0118 in)

Ordering Information:

Example: To order a 6 volt, 1319 Motor intended to fit our 15/3 Gearhead, Specify:

Motor **13** **19** **E** **006** **S** **...** **+** **15/3** **,** **11.8:1**

Motor Diameter _____
Motor Length _____
Output shaft configuration _____
E = Pinion for 15/2, 3, 5 and 16A Gearheads
(9 Teeth, Metric Module = .2 Modified Involute,
DIN 58400, Pressure Angle = 20 °)
T = Ø1.5 mm X 6 mm shaft end

Desired Gear Ratio
Desired Gearhead Series
Special Order Numbers
Commutator Plating Material:
S = Silver
Nominal Voltage

Series 1319 is available with 5.9 in. long leads instead of solder tabs. Specify letter "L" in Special Order Number slot.